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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/721,854	11/22/2000	Harold A. Rosen	PD-990166A	3937
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HUGHES ELECTRONICS CORPORATION PATENT DOCKET ADMINISTRATION RE/R11/A109 P O BOX 956 EL SEGUNDO, CA 90245-0956			EXAMINER LE, LANA N	
			ART UNIT 2685	PAPER NUMBER 11
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/721,854

Applicant(s)

ROSEN ET AL.

Examiner

Lana Le

Art Unit

2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9 . 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Regarding independent claim 1, applicant state that the communication platform doesn't have a transponder to communicate and that the inherent transponder of the cited reference doesn't disclose a bent pipe system. However, by definition, a transponder is a radio relay equipment on board the aircraft in a bent pipe or relay communication system. Therefore, it is inherent within an airplane that a transponder is used to relay signals from a ground station via the airplane to another destination ground station using transmitter/receiver pair 166 or gateway antenna 168 (col 8, lines 1-23) as is disclosed by Martin et al in which the aircraft 12 acts as a relay station between gateway devices 22 (see col 5, lines 30-42 and col 5, lines 50-55);

the aircraft receives data from gateway device 22 and retransmits the data to another gateway 22 or CPE 18 in which the aircraft 12 acts as a repeater station to route and/or relay data from an originating device to a destination device; retransmit/relay the received data from the originating device to the destination device in the cited Martin reference acting as "a radio relay equipment on board the aircraft in a bent pipe or relay communication system"

Regarding claim 4, the argument also alleges that the reference doesn't disclose the platform maintains an apparent position within user terminal's antenna beamwidth. However, according to applicant's specification, page 7, lines 19-23, "the platform flies in a small radius flight path 118 typically a circle, ellipsoid, or other shaped path over a

orbit 30 which can be circular, elliptical, or any other suitable orbit to maintain the ASN 14 positioned over above service region 16".

Also, according to col 3, line 63 - col 4, line 11 of Martin et al, the gateway device 22's antenna beamwidth is narrow and capable of receiving millimeter wave frequency signals from the aircraft 12 flying in a circle of a predefined diameter providing continuous communication capabilities to service region 16 which in other words, even within the predefined circle discussed in the above paragraph, the gateway's antenna is still able to receive signals from the aircraft within its narrow beamwidth which reads on the claim's broad limitation "the platform maintains an apparent position relative to the user terminal within the beamwidth of the user terminal antenna".

Regarding claim 6, the argument alleges that the gateway doesn't directly communicate with one or more communication platform. However, according col 3, lines 64-67, the three aircraft 12 service only one service region 16 and therefore each and every one of those aircrafts may directly communicate with the gateway 22 and only in different overlapping regions 16 do they communicate from one ASN 14 to another. Therefore, the rejections stands as set forth in the previous office action.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-9, 14-16, 18-21, and 23-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Martin et al (US 6,061,062).

Regarding claim 1, Martin et al discloses a communications system (fig. 1), comprising: a gateway 22, communicatively coupleable to a terrestrially-based network 54 (col 6, lines 44-53); a communications platform 12 disposed in a stratospheric location (col 3, lines 54-55), for transponding information between at least one of a plurality of user terminals 18 (col 4, lines 63-65) and the gateway 22 (col 5, lines 30-43; col 6, lines 19-23).

Regarding claim 2, Martin et al further discloses the communications system of claim 1, wherein the gateway 22 aggregates all data traffic comprising the information between the plurality of user terminals 18, 22 (col 6, lines 44-53).

Regarding claim 3, Martin et al further discloses the communications system of claim 1, wherein: the gateway 22 aggregates all data traffic comprising the information between each of the user terminals 18, 22 and the terrestrially-based network 54 (col 6, lines 44-53).

Regarding claim 4, Martin et al further discloses the communications system of claim 1, wherein: Martin further disclose the user terminal 18 includes a user terminal antenna characterizable by a beamwidth (col 4, lines 1-11); and the communications platform 12 maintains an apparent position relative to the user terminal within the focused beamwidth of the user terminal antenna (col 8, lines 24-54;).

Regarding claim 5, Martin et al further discloses the communications system of claim 1, wherein the system comprises more than one communications platform (col 3, lines 64-67).

Regarding claim 6, Martin et al further discloses the communications system of claim 5, wherein the gateway communicates with more than one communications platform (col 5, lines 50-65; col 3, lines 64-67).

Regarding claim 7, Martin et al further discloses the communications system of claim 6, wherein the user terminal communicates with only one communications platform 12 (col 5, lines 50-65; col 3, lines 64-67; center of fig. 1).

Regarding claim 8, Martin et al further discloses the communications system of claim 1, wherein the user terminal communicates with the communications platform 12 in a first frequency band, and the communications platform 12 communicates with the gateway 22 in a second frequency band (col 14, lines 18-25).

Regarding claim 9, Martin et al further discloses the communications system of claim 1, wherein the stratospheric location of the communications platform is within a predetermined distance of at least 52,000 feet above ground of the user terminal to maintain communications between the communications platform and the user terminal (col 3, lines 61-63).

Regarding claim 14, Martin et al further discloses the communication system of claim 1, wherein the information is transponded according to a coding technique selected from the group comprising time division multiple access (TDMA) and code division multiple access (CDMA) (col 5, lines 44-50).

Regarding claim 15, Martin et al discloses a communications signal, generated by performing the steps of receiving a first signal from a user terminal having a user terminal antenna in a stratosphere-based communications platform 12, wherein the communications platform maintains an apparent position relative to the user terminal within a focused beamwidth of the user terminal 18, 22 antenna towards the aircraft 12 (col 4, lines 8-11); and transponding the first signal from the stratosphere-based communications platform to a gateway ground station 22 (col 5, lines 30-43; col 6, lines 19-23).

Regarding claim 16, Martin et al further discloses the signal of claim 15, wherein the terrestrially-based network is the Internet (col 6, lines 44-49).

Regarding claim 18, Martin et al discloses a method for communicating from a user terminal 18, comprising:

receiving a first signal from the user terminal having an antenna in a stratosphere-based communications platform 12, wherein the communications platform maintains an apparent position relative to the user terminal within a focused beamwidth of a user terminal antenna (col 4, lines 1-11); transponding the first signal from the stratosphere-based communications platform 12 to a gateway ground station 22 (col 5, lines 30-42; col 6, lines 19-23).

Regarding claim 19, Martin et al further discloses the method of claim 18, further comprising the steps of receiving the first signal from the gateway ground station 22 in the communications platform 12 (col 5, lines 36-39); and transponding the first signal from the communications platform to a second user terminal 20 (col 5, lines 39-42).

Regarding claim 20, Martin et al further discloses the method of claim 18, further comprising the steps of transmitting the first signal from the gateway ground station 22 to the terrestrially based network (col 6, lines 44-53).

Regarding claim 21, Martin et al further discloses the method of claim 20, wherein the terrestrially-based network is the Internet (col 6, lines 44-53).

Regarding claim 23, Martin et al communications system, comprising:
a user terminal 18 for transmitting and receiving data through a terrestrial-based network (col 6, lines 44-53); and wherein the user terminal 18 communicates with a gateway 22 via a an inherent stratospheric-based communications platform transponder located in aircraft 12 for relaying signals from the user terminal to the gateway (col 5, lines 30-43; col 6, lines 19-23).

Regarding claim 24, Martin et al further discloses the communications system of claim 23, wherein: the user terminal includes a user terminal antenna characterizable by a beamwidth(col 4, lines 1-11); and the communications platform maintains an apparent position relative to the user terminal within the focused beamwidth of the user terminal antenna towards the aircraft 12 (col 4, lines 1-11).

Regarding claim 25, Martin et al further discloses the communications system of claim 23, wherein the user terminal communicates with the communications platform in a first frequency band, and the communications platform communicates with the gateway in a second frequency band (col 14, lines 18-25).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al (US 6,061,562).

Regarding claim 12, Martin et al the communications system of claim 1, wherein Martin further discloses multiple networked ASNs 14 provide for overlapping coverage areas 16 for higher reliability of service to the subscribers. Martin didn't specifically disclose the aircrafts are in overlapping positions. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the platforms in overlapping positions in order to cover overlapping service areas 16 to provide higher reliability with less service loss to subscribers that might fall between these service areas.

2. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al in view of McKenna et al (US 6,377,802) and further in view of Emmons Jr. et al (US 6,570,858).

Regarding claim 13, Martin et al further discloses the communications system of claim 1, wherein each user terminal 18 is associated with a cell (col 4, lines 64-65) and user terminals in cells 42 communicate with different communication platforms 12 (col 5, lines 56-65). McKenna et al discloses user terminals in overlapping cells (fig. 5)

communicate with communication platform (col 3, lines 19-67; col 10 line 8 - col 11, line 31). Martin et al and McKenna et al didn't specifically disclose the user terminals communicate with the communication platform via spatial diversity. Emmons et al further discloses the user terminals communicate with the communication platform via spatial diversity (col 5, lines 19-22; fig. 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have overlapping cells coverage and for the user terminals to use spatial diversity in order to increase call handling capability with a low chance of receiving a degraded signal.

3. Claims 10, 17, 22 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al (US 6,061,562) in view of Brown (US (6,157,621).

Regarding claim 10, Martin et al further discloses the communications system of claim 1, wherein Martin et al didn't further discloses the gateway comprises a plurality of gateway antennae, separated from each other by a distance sufficient to provide spatial diversity in communicating with the communications platform. Brown et al further discloses the gateway comprises a plurality of gateway antennae 106, separated from each other by a distance sufficient to provide spatial diversity in communicating with the communications platform (col 35, lines 40-50). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide spatial diversity in order to gain a high probability of receiving a clear undiminished signal.

Regarding claim 17, Martin et al further discloses the signal of claim 15, wherein the antenna 168 transpond to gateway ground station 22 (col 8, lines 13-17), Martin didn't specifically disclose the first signal is transmitted in one of a plurality of beams to

the gateway ground station having a plurality of antennae disposed to provide spatial diversity among each of the plurality of beams. Brown et al further discloses the first signal is transmitted in one of a plurality of beams to the gateway ground station having a plurality of antennae 106 disposed to provide spatial diversity among each of the plurality of beams (col 35, lines 40-50). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide spatial diversity in order to obtain a higher chance of receiving a non-faded signal.

Regarding claim 22, Martin et al further discloses the method of claim 18, wherein the antenna 168 transpond to gateway ground station 22 (col 8, lines 13-17). Martin et al didn't further disclose the first signal is transponded by one of a plurality of beams to the gateway ground station having a plurality of antennae disposed to provide spatial diversity among each of the plurality of beams.

Brown et al further discloses the first signal is transponded by one of a plurality of beams to the gateway ground station having a plurality of antennae 106 disposed to provide spatial diversity among each of the plurality of beams (col 35, lines 40-50). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide spatial diversity in order lower the effect of fading by adding redundancy to the transmission/reception of the signal.

Regarding claim 26, Martin et al further discloses the communications system of claim 23, wherein Martin et al didn't further discloses the gateway comprises a plurality of gateway antennae, separated from each other by a distance sufficient to provide spatial diversity in communicating with the communications platform. Brown et al

further discloses the gateway comprises a plurality of gateway antennae 106, separated from each other by a distance sufficient to provide spatial diversity in communicating with the communications platform (col 35, lines 40-50). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide spatial diversity in order to achieve a high probability of receiving a clear undiminished signal.

Regarding claim 27, Brown et al and Martin et al discloses the communications system of claim 26, wherein Brown et al and Martin et al didn't further specifically disclose the distance is at least 200 meters. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make this distance in order to ensure antenna diversity is achieved by spacing the antennae apart by a significant fraction of the wavelength.

4. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al (US 6,061,562) in view of Brown (US 6,157,621) and further in view of Antonio et al (US 6,339,611).

Regarding claim 11, Martin et al and Brown et al disclose the communications system of claim 10, wherein Antonio et al further discloses the user terminals communicate with the communications platform using a communication diversity selected from the group comprising: spatial diversity; and polarization diversity (col 8, lines 30-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide communication diversity in order to communicate with

increased link margin with improved capacity and high power efficiency and to lower the effect of fading.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lana Le whose telephone number is (703) 308-5836. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (703) 305-4385. The fax phone numbers

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for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9315 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.



Lana Le

December 2, 2003



QUOCHIEN B. VUONG
PRIMARY EXAMINER